METCALF ENERGY CENTER (99-AFC-3)
DATA REQUESTS AND RESPONSES
SET 3A

(Responses to Data Requests: 3-207, 3-208, 3-209)

Submitted to:

CALIFORNIA ENERGY COMMISSION

Submitted by:

Calpine/Bechtel

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Technical Area: Alternatives
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Background

Staff understands that the applicant investigated a potential alternative project site near the Monta Vista substation, and perhaps another site or sites near one or more of the five PG&E substations (Monta Vista, Jefferson, Newark, Ravenswood, and San Mateo) that could be used to supply power to the South Bay.

DATA REQUESTS[1]

3-207. Please identify the site(s) on a map and describe it.

3-208. Please provide all information gathered regarding the feasibility of the site(s).

3-209. Please provide any environmental information gathered regarding the site(s).

Response: The following is the response to Data Requests 3-207, 3-208 and 3-209:

EXECUTIVE SUMMARY

The Monta Vista substation area offers no advantages over the Applicant's proposed Metcalf site for the following major reasons:

- The closest PG&E natural gas pipe line connection of potentially adequate capacity is approximately 6 miles from the substation across densely populated business and residential corridors of Sunnyvale and Cupertino, CA. PG&E believes that the capacity of this line would need to be reinforced with an upgrade to PG&E's Milpitas gas terminal. The closest PG&E gas supply with assured capacity is approximately 12 miles from the site near Milpitas. A routing through either corridor would include crossings of most major South Bay highways and thoroughfares and other costly, sensitive areas.

- The closest recycled water supply connection (City of Sunnyvale) is approximately 6 to 7 miles from the area of the Monta Vista substation across densely populated business and residential corridors of Sunnyvale and Cupertino, CA, and would require a major expansion of the existing water treatment facilities to meet cooling tower demands. Sufficient recycled water to meet cooling tower demands would be available from the City of San Jose through the South Bay Water Recycling program, but is 21 miles away. The closer supplier of recycled water (Sunnyvale) is not the same entity which would provide sewer service (Cupertino) and treatment / disposal capacity (City of San Jose through its WPCP). This is problematic in that the WPCP would receive the impact of the discharge without the benefit of recycled water consumption. (With the Metcalf site,

[1] **Note:** a "3-" has been entered in front of each number to distinguish them from duplicate numbers in Data Request Set #2 received from the CEC.]

both recycled water supplier and wastewater agency are the City of San Jose Environmental Services Department).

- There is no suitable or sufficient land in the vicinity of the Monta Vista substation. The lands immediately adjacent to the Monta Vista substation are primarily residential. County lands in the foothills to the west and south of substation are either parkland, open space preserve or are owned by the Hanson Cement Company. Siting the plant on the Hanson Cement property was investigated, but a sufficiently sized and level plot (the abandoned Kaiser Aluminum facility from the World War II era) is likely to require significant environmental remediation before a new facility could be built.

SITE LOCATION

PG&E's Monta Vista substation is located within the city limits of Cupertino, CA. (See Item 1 on the attached map). It is approached via Interstate 280 (I280) at the Foothill Blvd. exit. Taking Foothill Blvd. south and then taking Stevens Creek Blvd. west, the substation entrance is just off California Oak Way. The substation is bounded on all sides by residences that currently exist or are under construction. The Gates of Heaven Catholic Cemetery is just west of the substation and Rancho San Antonio County Park and Open Space Preserve is generally west of the cemetery. The substation is quite visible from most observation points to the north, south and west but is shielded somewhat from view on the east side by topography and vegetation. The other dominant visual features of the area are the facilities of the Hanson Cement plant (formerly Kaiser) generally to the south and west of the substation and somewhat back into the Santa Cruz foothills. Hanson Cement's properties are within an unincorporated area of Santa Clara County. (See Item 2 on the attached map)

MAJOR SITING ISSUES

Natural Gas Supply

PG&E was contacted regarding the location of existing gas supply lines in the vicinity of the Monta Vista substation. PG&E lines 109 and 132 are the closest distribution mains to the Monta Vista substation area. (See Item 3 on the attached map). These two lines are the main distribution headers that serve the San Francisco Peninsula all the way into the City of San Francisco. They connect into the main PG&E transmission and gathering line 300 at PG&E's Milpitas Gas Terminal in the South Bay near the junction of Highway 237 and I-880. Lines 109 and 132 generally follow the alignment of Highway 237 from Milpitas to the Moffitt Air Field and continue west towards Woodside where they generally lineup with the alignment of I-280 north into San Francisco. Gas distribution branches into the local cities off the main distribution lines are too small in capacity and low in pressure to serve the natural gas needs of a facility the size of MEC.

At their closest approach, lines 109 and 132 are approximately 6 miles from the Monta Vista substation. PG&E indicated that the gas demand of a Metcalf-sized facility might require an upgrade of these lines and modifications to the Milpitas Terminal station. A direct routing of a branch line from PG&E lines 109 or 132 to the vicinity of the Monta Vista substation

would require passage through very densely populated and congested residential and business corridors of Mountain View, Sunnyvale, Los Altos and Cupertino.
PG&E has indicated that its main transmission line 300 would likely be able to provide the gas service to the Monta Vista area without an upgrade of the pipeline and the Milpitas Terminal, but a connection to this line would be even more problematic than a connection to lines 109 or 132. The closest direct connection to line 300 would be approximately 12 miles from the Monta Vista site. This would require a connection near Milpitas and a routing through north San Jose, Santa Clara and Cupertino with several highway, major thoroughfare and creek / river crossings in a very densely populated and congested region.

It would be unreasonable to expect PG&E to exert its condemnation influence in support of a single industrial customer in the face of perhaps hundreds of residential and industrial customers for a gas line alignment through such a congested corridor.

In any event, the gas line routing from either lines 109 or 132 or line 300 to a plant site in the vicinity of the Monta Vista site is a potential fatal flaw in this alternative location.

Water Resources

CH2M Hill conducted a survey of water resources in the vicinity of the Monta Vista substation. The following has been excerpted from their report.

Recycled Water

The City of Sunnyvale has the closest water pollution control plant (WPCP) to the Monta Vista substation that produces recycled water. The current recycled water production capability is 8 mgd, of which there is a firm demand for 2 to 4 mgd. Therefore, the WPCP plant currently has excess capacity of approximately 4 mgd. An extension of the recycled water distribution system is currently under construction and will extend to the intersection of Wolfe Road and Kifer Road in Sunnyvale (see Item 4 on the attached map). This extension is scheduled for completion in late 2000. At this intersection, the water source is about 6 to 7 miles from the Monta Vista substation and several hundred feet lower in elevation. Future customers along this extension are expected to absorb some of the available excess capacity.

A MEC sized facility has a recycled water consumption requirement over 4 mgd so expansion of the existing recycled water production capacity at Sunnyvale would be required to serve a MEC-type plant near the Monta Vista substation.
In addition, the Sunnyvale recycled water distribution system would need to be extended 6 to 7 miles through heavily populated residential and business corridors of Sunnyvale and Cupertino and across two major highways (I-280 and Highway 85) to reach a site near the Monta Vista substation. Because a Sunnyvale recycled water extension to the Monta Vista area would extend into another district's service territory, many institutional and jurisdictional issues would need to be addressed as well. Furthermore, a pump station would likely be required at some point in this extension since the area around the Monta Vista substation is significantly higher in elevation than the Sunnyvale source.

A further recycled water complication arises from the fact that the potential recycled water supplier (Sunnyvale) is a different entity that the agency that would provide the sewer service (Cupertino). Cupertino's sewer water is treated by the City of San Jose through its WPCP. So the benefit of using Sunnyvale's recycled water would pose an additional burden on the San Jose WPCP.

The next closest alternate source of recycled water supply is the same as the Metcalf plant, i.e., the South Bay Water Recycling program. The SBWR interface point for a Monta Vista site would be the same as Metcalf but the routing would be significantly longer and more problematic. CH2M Hill has approximated an alignment for SBWR water to the Monta Vista area. The pipeline would run about 21 miles through the South Bay and require crossings of Highway 87, I-280, I-680 and San Thomas Expressway. The pipeline would also need to cross the Guadalupe River, Los Gatos Creek and Calabazas Creek.

Therefore, recycled water is not considered to be a feasible source of supply for a MEC type plant in the vicinity of the Monta Vista substation due to:

- The inherent conflict in receiving recycled water from and providing a benefit to one agency and delivering wastewater to and creating a burden upon another agency.

- Excessive recycled water line extension costs associated with long and congested alignments through dense residential and commercial corridors.

Potable Water

San Jose Water Company is the water utility in the vicinity of the Monta Vista substation. The closest potable water line to the Monta Vista substation of significant capacity is a 20 inch line at the intersection of Ridgeway Drive and Stevens Creek Blvd, approximately 3,500 feet from the substation. (see Item 5 on the attached map). However, the Water Company conducted a hydraulic analysis of this line at this point and determined that its capacity is about 1,500 gpm or about 2 mgd. A MEC-sized plant requires a water supply of over 4 mgd. No further investigations were performed to determine what modifications would need to be performed to the system to raise its capabilities to meet the needs of a MEC sized plant.

Potable water cannot be considered to be a feasible source of water supply for a MEC type plant in the vicinity of the Monta Vista substation without considerably more study and investigation.

Groundwater

The Monta Vista substation is located in the foothills of the Santa Cruz Mountain range along western edge of the Santa Clara Valley. Generally, the lithology in this area is comprised of the Santa Clara Formation that contains layers of coarse sediments (gravels and sands) that have good permeability and, therefore, potentially good yield. The thickness of the water-bearing zones varies greatly. Therefore, estimating the amount of water that may be produced is difficult without detailed knowledge of the soils underlying the site. Considering the variable statigraphy in this foothill area (at the boundary of the

groundwater basin), a quantitative assessment of potential yield can only be determined by conducting an on-site pumping test. Depth to water in this area is approximately 150 to 200 feet. Therefore, the costs associated with getting to the water zone and extracting the water would be significant.

Reference values of specific yield from shallow groundwater near the site range from 100 to 200 gpm (150K - 300K gpd). However, since the geology in the area along the boundary of the Santa Clara Water Basin is variable, not much information is available about the thickness of the water bearing zones at the site. The SCVWD does not track groundwater information at the site because it is outside their water basin. As elevation increases outside the water basin, bedrock becomes shallower and there is less chance that a high yield aquifer would be encountered.

There are three private wells (07S02W09P001, 07S02W16B10 and 07S02W16B11) owned and operated by the Gate of Heaven Cemetery located just to the east of the site. These wells are located at about the 400-ft contour elevation line. The cemetery wells are most likely used for irrigation. There is also one well at Rancho San Antonio County Park that is not used frequently. The yields of these wells are unknown.

Ground water cannot be considered to be a feasible source of water supply for a MEC type plant in the vicinity of the Monta Vista substation without considerably more study and investigation.

Waste Water

Cupertino Sanitary District was contacted regarding sewer service in the vicinity of the Monta Vista substation suitable for up to 1 mgd wastewater. The closest sewer connection of anywhere near appropriate size for this flow would be a 14 inch line approximately 1 mile from the substation. (see Item 6 on the attached map). The District indicated that this line would likely not be able to absorb an additional 1 mgd without upgrading. A system-wide study would be required to determine required sanitary system upgrades for an additional wastewater flow of 1 mgd. Cupertino's sewer water is handled by the City of San Jose at its WPCP. As noted above in the recycled water discussion, there are problematic institutional issues with taking recycled water from one agency (Sunnyvale) while sending wastewater to another agency (City of San Jose WPCP via Cupertino sewers).

Land Availability

The Monta Vista substation is surrounded on all sides by residential property. Several new homes are currently under construction within clear view and close proximity to the substation. There is no sufficiently large (10 – 15 acres) relatively flat land area in the near vicinity of the substation which is either undeveloped or properly zoned for a MEC-type facility.

The Hanson Cement plant is approximately 1 mile from the Monta Vista substation. The Hanson properties encompass approximately 3,500 acres of the Santa Cruz foothills generally adjacent to Permanente Creek. The existing facilities on their lands are zoned for

their current operations and their undeveloped lands are generally zoned agricultural with an allowance for extractive purposes in support of their business.

Siting the plant on the Hanson Cement property was investigated but a sufficiently sized and level plot (the abandoned Kaiser Aluminum facility from the World War II era) could have potentially significant environmental remediation issues to address before a new facility could be built.

Electrical Transmission

Preliminary studies indicate that if an MEC-sized energy facility could be sited near the Monta Vista substation, its interconnection would be essentially the same as the current interconnection proposed for the Metcalf Energy Center.

Environmental Impacts

An environmental analysis was not conducted for the Monta Vista area since no suitable sites for a MEC-sized facility could be identified and there are many disadvantages to siting in this area related to linear facility services. Nevertheless, if it were somehow conceivable to consider a site near the Monta Vista substation, it would have to be on the Hanson Cement property. Although environmental aspects of this site would need to be investigated in detail, it is apparent that several aspects of this site would be less desirable, environmentally, than the Metcalf site, including:

- **Visual** – The space proposed at the site of the vacated Kaiser Aluminum plant is quite prominent and visible from many key observations points in the densely populated communities below.
- **Traffic and Transportation** – The continuous truck traffic on Foothill Blvd. and Stevens Creek Blvd. into and out of the existing cement plant already makes it one of the most heavily traveled corridors in the Bay Area.
- **Water Resources** – As noted in the water supply discussion above, supply of recycled water and disposal of wastewater are problematic due to institutional jurisdictional hurdles. Ground water availability is also a concern due to the elevation of the site.
- **Geologically**, the Monta Vista area is right on top of the Monte Vista fault and several miles closer to the San Andreas fault than Metcalf.

In terms of other the environmental aspects that would require more study (air quality, biological impacts, noise, hazardous material impacts, etc), an alternate site near Monta Vista would, at best, be no better than Metcalf.

CONCLUSION

The Monta Vista alternative has several key aspects (gas line, water liner, sewer line) where it has more environmental and / or institutional impacts than MEC and is no better than MEC in other areas; therefore, the Monta Vista alternative is a less desirable location than Metcalf.

INSERT FIGURE—MONTA VISTA ALTERNATIVE SITE EVALUATION LOCATION MAP